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FRANKLIN CO.

35042001

**State of North Carolina  
Department of Environment  
and Natural Resources  
Raleigh Regional Office**

**Michael F. Easley, Governor  
William G. Ross, Jr., Secretary**



**DIVISION OF WASTE MANAGEMENT**

April 30, 2001

Mr Steve Stadleman  
Manager of Environmental Operations  
Novozymes North America, Inc.  
P.O. Box 576  
Franklinton, North Carolina 27525-0576

**Re: Comprehensive Audit Report of Solid Waste Pilot Composting Project  
Permit # By Letter  
County: Franklin**

Dear Mr. Stadleman :

The comprehensive audit of Novozymes North America Pilot Composting Project was conducted on April 26, 2001 . One the reverse side of this document is a copy of the composting facility audit report.

Sincerely,

Ben Barnes  
Waste Management Specialist  
Solid Waste Section

cc: Phil Prete: Field Operations Branch Head  
Mark Fry: Eastern Area Supervisor  
Ted Lyon: Composting and Land Application Branch Head

## COMPREHENSIVE FACILITY AUDIT REPORT

- (1) **Facility Information:** Novozymes Of North America, Inc Pilot Composting Project, Off Hwy 56 East of Franklinton
- (2) **Facility Contact:** Steve Stadleman phone # 919 494 3000
- (3) **Audit Participants:** Ben Barnes and Frank Franciosi, Akkadia Consulting
- (4) **Date of Inspection:** April 26, 2001
- (5) **Date of Last Inspection** Initial inspection
- (6) **Purpose of Inspection** Initial inspection to determine compliance
- (7) **Violations Noted:** None
- (8) **Comments/Suggestions** Operation very small at this time. Consists of two windrows, one positive aerated static pile and one negative aerated static pile.

Please let me know if you have any questions concerning this inspection

Ben Barnes

Waste Management Specialist  
Solid Waste Section

Cc: Phil Prete: Field Operations Branch Head  
Mark Fry: Eastern Area Supervisor  
Ted Lyon: Composting and Land Application Branch Head

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
William L. Meyer, Director



March 29, 2001

Mr. Steve Stadleman  
Manager of Environmental Operations  
Novozymes North America, Inc.  
PO Box 576  
77 Perry Chapel Church Road  
Franklinton, North Carolina 27525-0576

Dear Mr. Stadleman:

The Division of Waste Management, Solid Waste Section, has reviewed your request for approval of a Solid Waste Pilot Composting Permit off NC 56 near Perry Chapel Road in Franklin County. Your request is considered approved in accordance with the N.C. Solid Waste Management Rules, 15A NCAC 13B .1409 and subject to the following conditions:

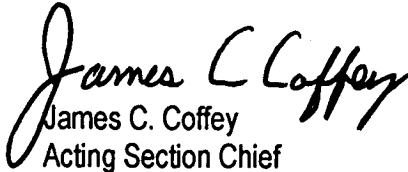
- (1) The approval period is from receipt of this letter to March 31, 2002. If an extension is needed it must be requested by March 1, 2002 with a justification for the extension.
- (2) Composting at this site shall be limited to the materials specified in the application and shall meet all the required setbacks in Section .1404 of the NC Solid Waste Compost Rules.
- (3) The site shall be prepared to control run-off and run-on. Best management practices shall be utilized for this purpose. All run-off from the site and any leachate generated shall be managed to prevent any impact to ground or surface waters.
- (4) This approval is subject to immediate revocation if activities on site result in a direct or potential threat to the public health or the environment or if significant odor problems are created. The Division of Waste Management reserves the right to apply any other requirements of 15A NCAC 13B Section .1400 as the Division deems necessary during the above approval period.
- (5) Operation of the facility and compost monitoring activities will be in accordance with the approved application and Section .1406 of the Solid Waste Management Rules. Records of temperatures shall be maintained to show pathogen reduction and vector attraction reduction requirements have been met and shall be available to representatives of the Section upon request.

1646 Mail Service Center, Raleigh, North Carolina 27699-1646  
Phone: 919-733-4996 \ FAX: 919-715-3605 \ Internet: [www.enr.state.nc.us](http://www.enr.state.nc.us)

- (6) Compost testing, frequency of testing, and reporting of test results shall be in accordance with the approved application and Section .1408 of the Solid Waste Management Rules. Classification and distribution of compost shall be in accordance with Section .1407 of the Solid Waste Management Rules.
- (7) All compost shall be tested and approved by the Solid Waste Section prior to removal from the facility for any use.
- (8) Within 30 days of completion of the pilot project, or by May 1, 2002, which ever occurs first, submit two copies of the final report to the Solid Waste Section. The report shall include the information specified in the approved application.
- (9) Any changes or additions to this facility, subsequent to receipt of this letter shall be approved prior to the start of construction.
- (10) This approval is not transferable.
- (11) Mr. Ben Barnes, Regional Waste Management Specialist, will be responsible for oversight and inspection of the facility and related activities. Mr. Barnes can be contacted at (919) 571-4700.
- (12) A pre-operation inspection of the facility shall occur prior to the start of composting. Ted Lyon shall be contacted to schedule the meeting.

If you have questions concerning this approval please contact Ted Lyon, Composting and Land Application Branch Supervisor at (919) 733-0692, extension 253.

Sincerely,

  
James C. Coffey  
Acting Section Chief

cc: Ben Barnes, Waste Management Specialist, Raleigh Regional Office

*compost/demo/approval/Franklin/March 9, 2001*



March 9, 2001

Ted Lyon  
NCDEHNR Div. of Solid Waste Mgmt.  
PO Box 2687  
401 Oberlin Rd.  
Suite 150  
Raleigh, NC 27611-7687

Dear Ted:

Novozymes North America, Inc. is submitting this letter to request for approval for a Composting Pilot Study. The purpose of this project is to evaluate three different composting technologies and their efficiencies to compost four different waste by-products. The following information is provided as per Section .1409(b) of the Solid Waste Compost Rules.

**1. Owner, Operator, Location, Contact and Contact Numbers**

Novozymes North America, Inc.  
77 Perry Chapel Church Road  
PO Box 576  
Franklinton, NC 27525-0576  
Steve Stadelman  
919-494-3390

**2. Specific Waste Streams**

- a. Yard waste
- b. Animal bedding
- c. Furniture sawdust - (this material may contain some small pieces of plastic laminate).
- d. Spent Bio Mass (SBM). This is an industrial residual generated from the production of food and technical grade enzymes and biological treatment of process wastewater. It will be used as a nitrogen source. The SBM contains primarily spent production bacteria and fungi which are non-pathogenic, non-toxigenic organisms approved for enzyme production. The SBM also contains about 15% by volume waste activated sludge from the treatment of enzyme process wastewater. Sanitary waste at Novozymes goes to a separate collection system and is pumped to the Franklin County POTW east of Franklinton. The SBM is stabilized with hydrated lime to pH 12 to meet vector reduction requirements.

### **3. Time Frame**

March 19, 2001 – March 18, 2002

### **4. Estimated Amount of Waste**

- a. 100-200 cubic yard of Yard waste.
- b. 100-200 cubic yards of Animal bedding.
- c. 100-200 cubic yards of Furniture sawdust.
- d. 100-200 cubic yards of Spent Bio Mass.

### **5. Basis of the Demonstration Project**

Information and data gained from this project will be used to determine the best environmental and economical method of composting these waste by-products.

### **6. Description of Testing Procedures**

#### **Daily Procedures -**

Temperatures will be taken three times weekly at three different points along the windrow or as necessary there after to meet PFRP specifications. All three readings will be recorded as well as the mean temperature. The physical conditions of each pile will be observed and recorded on a data sheet. An inspection of site drainage and vectors will also be noted at this time, and appropriate action taken to control any problems.

#### **Weekly Procedures -**

The Turned Windrow method will be turned based on PFRP specifications and after on moisture and oxygen levels. Percent moisture readings will be taken at the end of each week by sampling, weighing, and drying to determine percent dry weight. We will use 50% moisture as our optimum percentage for decomposition. Moisture readings taken weekly will determine the frequency of watering. As a general practice we will water with SBM to provide a nitrogen source for composting and maintain 50% moisture level. The amount in gallons will be recorded. Percent oxygen present within a windrow will be monitored using an Oxygen Analyzer to maintain levels at or above the 2-5% range. A 6-foot copper tube probe is inserted at a depth of 4 feet, at 3 different points along the middle of each windrow. All readings will be recorded as well as the mean oxygen level.

#### **Monthly Procedures -**

A finished product standard of 15:1 carbon to nitrogen ratio will be used as the quality standard. Samples will be taken from each pile at three different points and a composite sample will be sent to NCDA Labs for analysis. Monthly, the NCDA lab will run moisture, pH, NPK, micronutrients, soluble salts, and percent organic matter. This data along with the daily data sheets will be summarized for review. We will track the volume and weight measures of all materials from start to finish.

### **7. Description of Processes**

- a. Turned Windrow Method
- b. Positive Aerated Static Pile Method
- c. Negative Aerated Static Pile Method

**8. Final Usage**

All finished compost product will be used for studies on product quality.

**9. Outline of Final Report**

This will be completed as per Section .1408 methods for testing and reporting.

We look forward in getting this project started. If you have any questions or require additional information please contact me at (919) 494-3390.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Stadelman", written over a horizontal line.

Steve Stadelman, Manager of Environmental Operations, NZNA

CC: Paul Rehder, Director of Engineering Services and Environmental Operations, NZNA